R E M A R K S

Claims 1-23 were presented for examination and were rejected. The applicants respectfully request reconsideration in light of the amendments and the following comments.

35 U.S.C. 112, First Paragraph Rejection of Claims 1-23

Claims 1 through 23 have been rejected under 35 U.S.C. 112, First Paragraph, for containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to make or use the invention. The applicants respectfully submit that the claims, as amended, overcome the rejection.

Claim 1, as amended, recites:

> **1.** An apparatus comprising:
>
> (a) a plurality of access points, *wherein each of said access points is for performing a first non-empty set of protocol services, but not a second non-empty set of protocol services, for a respective network*, and wherein the correctness of each protocol service in said first set is based on a maximum timing delay, and wherein the correctness of each protocol service in said second set is independent of said maximum timing delay; and
>
> (b) a central controller for:
>
> (i) performing said second non-empty set of protocol services,
>
> (ii) receiving an input signal from each of said plurality of access points, and
>
> (iii) transmitting to each of said plurality of access points an output signal based on the input signal from that access point and a protocol service that belongs to said second set of protocol services;
>
> *wherein said first set and said second set constitute a partition of the set of protocol services of a protocol stack*.
>
> (*emphasis supplied*)

The recitation:

> *wherein each of said access points is for performing a first non-empty set of protocol services, but not a second non-empty set of protocol services, for a respective network*

is supported in the specification at paragraph [0008]:

> *The present invention enables some of the protocols of a protocol stack to be "off-loaded" from an access point to a remote processor. In particular, the illustrative embodiment employs a remote central controller that can serve a plurality of access points, thus enabling a plurality of wireless local-area networks to be constructed with reduced-functionality access points (i.e., access points that implement a proper subset of a protocol stack) and a single remote controller. By enabling the use of "thin" (i.e., reduced-functionality) access points, the illustrative embodiment offers two benefits: first, it reduces the cost of the access points, which is especially advantageous when deploying a large number of wireless local-area networks (for example, on a corporate or academic campus).*

and at paragraph [0022]:

> *Each thin wireless access point 301-i is connected to central controller 303 via bi-directional link 304-i. As described in detail below, each thin wireless access point 301-i performs those protocol services whose correctness depends on a maximum timing delay. In addition, when wireless access point 301-i detects a particular condition (e.g., receiving a signal from a station, detecting that the shared-communications channel has been idle for a time interval, etc.) that triggers a protocol service whose correctness does <u>not</u> depend on any maximum timing delay, thin wireless access point 301-i sends a signal to central controller 303 via bi-directional link 304-i to perform the protocol service.*

The recitation:

> *wherein said first set and said second set constitute a partition of the set of protocol services of a protocol stack*

is supported in the specification at paragraph [0062]:

> *"This example therefore provides guidelines for partitioning the AP functions into two parts, (1) a 'thin' AP and (2) a centralized controller so that the resulting MAC performance does not suffer, and the AP has minimal functionality."*

Therefore the applicant respectfully submits that claim 1, as amended, overcomes the rejection, and that claim 1 is now in condition for allowance.

Because claims 2 through 6 depend on claim 1, the applicant respectfully submits that these claims are also in condition for allowance.

Claim 7, as amended, recites:

> **7.** A method comprising:
>
> (a) performing one or more of a first non-empty set of protocol services using a first processor, wherein the correctness of each protocol service in said first set is based on a maximum timing delay, and wherein said first processor is programmed to perform each protocol service in said first set;
>
> (b) transmitting a first signal to a second processor, wherein said second processor is programmed to perform each of a second non-empty set of protocol services, and wherein the correctness of each protocol service in said second set is independent of said maximum timing delay, and wherein said second processor is not programmed to perform any of said first set of protocol services, and wherein said first processor is not programmed to perform any of said second set of protocol services, and wherein said first set and said second set constitute a partition of the set of protocol services of a protocol; and
>
> (c) receiving from said second processor a second signal based on a protocol service in said second set.

The applicant respectfully submits that claim 7 is supported by the following excerpts of the specification, in combination with those cited above:

[0027] *Figure 6 depicts a block diagram of the salient components of thin access point 301-i in accordance with the illustrative embodiment of the present invention. As shown in Figure 6, thin access point 301-i comprises receiver 601-i, processor 602-i, memory 603-i, and transmitter 604-i, interconnected as shown.*

[0029] *Processor 602-i is a general-purpose processor that is capable of executing instructions stored in memory 603-i, of reading data from and writing data into memory 603-i, and of executing the tasks described below and with respect to Figure 8.*

[0032] *Figure 7 depicts a block diagram of the salient components of central controller 303 in accordance with the illustrative embodiment of the present invention. As shown in Figure 7, central controller 303 comprises receiver 701, processor 702, memory 703, and transmitter 704, interconnected as shown.*

[0034] *Processor 702 is a general-purpose processor that is capable of executing instructions stored in memory 703, of reading data from and writing data into memory 703, and of executing the tasks described below and with respect to Figure 9.*

The applicant therefore respectfully submits that claim 7, as amended, overcomes the rejection, and that claim 7 is now in condition for allowance.

Because claims 8 through 19 depend on claim 7, the applicant respectfully submits that these claims are also in condition for allowance.

Claim 20, as amended, recites:

> **20.** A method comprising:
>
> (a) performing a first protocol service for a first network using a first processor, wherein said first protocol service belongs to a first non-empty set of protocol services, and wherein the correctness of each protocol service in said first set is based on a maximum timing delay, and wherein said first processor is programmed to perform each protocol service in said first set;
>
> (b) performing said first protocol service for a second network using a second processor;
>
> (c) transmitting a first signal from said first processor to a third processor;
>
> (d) performing a second protocol service for said first network using said third processor, wherein said second protocol service belongs to a second non-empty set of protocol services, and wherein the correctness of each protocol service in said second set is independent of said maximum timing delay, and wherein said third processor is programmed to perform each protocol service in said second set, and wherein said third processor is not programmed to perform any of said first set of protocol services, and wherein said first processor is not programmed to perform any of said second set of protocol services, and wherein said first set and said second set constitute a partition of the set of protocol services of a protocol stack;
>
> (e) transmitting a second signal from said third processor to said first processor, wherein said second signal is based on said second protocol service;
>
> (f) transmitting a third signal from said second processor to said third processor;
>
> (g) performing said second protocol service for said second network using said third processor; and
>
> (h) transmitting a fourth signal from said third processor to said second processor, wherein said fourth signal is based on a protocol service in said second set.

For the same reasons as for claim 7, the applicant respectfully submits that claim 20, as amended, is now in condition for allowance.

Because claims 21 through 23 depend on claim 20, the applicant respectfully submits that these claims are also in condition for allowance.

35 U.S.C. 112, Second Paragraph Rejection of Claims 1-23

Claims 1-23 have been rejected under 35 U.S.C. 112, Second Paragraph, because the limitation "the set of protocol services of a protocol stack" lacks antecedent basis. The applicant respectfully traverses the rejection.

Claim 1, as amended, recites:

> **1.** An apparatus comprising:
>
> (a) a plurality of access points, wherein each of said access points is for performing a first non-empty set of protocol services, but not a second non-empty set of protocol services, for a respective network, and wherein the correctness of each protocol service in said first set is based on a maximum timing delay, and wherein the correctness of each protocol service in said second set is independent of said maximum timing delay; and
>
> (b) a central controller for:
>
> (i) performing said second non-empty set of protocol services,
>
> (ii) receiving an input signal from each of said plurality of access points, and
>
> (iii) transmitting to each of said plurality of access points an output signal based on the input signal from that access point and a protocol service that belongs to said second set of protocol services;
>
> wherein said first set and said second set constitute a partition of ***the set of protocol services*** of a protocol stack.
>
> (***emphasis supplied***)

35 U.S.C. 112, Second Paragraph, requires that the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. In other words, that the limitations of the claim be clear, unambiguous, and not vague.

This rejection is a knee-jerk reaction to the existence of a term — set of protocol services — that is preceded by the definite article "the" without having been used earlier in the claim preceded by the indefinite article "a". In the English language, the "intensive" and inherently logical properties of a noun are usually not preceded by the indefinite article even

when used for the first time in a conversation. For example, no one is confused by the question "What is the mass of that object?"

Taken to its logical conclusion, the Office's position is absurd. Suppose a patent attorney is walking down Duke Street and has forgotten his wristwatch and walks up to a patent examiner. The following dialogue might occur:

Attorney: Excuse me, I've forgotten my wristwatch today. Can you tell me the time?

Examiner: I'm sorry. I don't understand what you are asking me because the object of your sentence 'time' lacks antecedent basis. Are you asking me if I know a time?

Attorney: (With a confused look) What's a time?

Examiner: It's three o'clock. Is there anything else that I can help you with?

Attorney: Uh, do you happen know the Pythagorean theorem?

Examiner: If you mean a Pythagorean Theorem, why yes I do.

Attorney: Is there more than one?

Examiner: I only know of one Pythagorean Theorem. It states that a sum of a squares of a lengths of a sides of a right triangle is equal to a square of a length of a hypotenuse.

Attorney: Thanks. I'm sorry that I asked.

For these reasons, the applicants respectfully submit that the rejection is traversed.

Request for Reconsideration Pursuant to 37 C.F.R. 1.111

Having responded to each and every ground for objection and rejection in the last Office action, applicants respectfully request reconsideration of the instant application pursuant to 37 CFR 1.111 and request that the Examiner allow all of the pending claims and pass the application to issue.

If there are remaining issues, the applicants respectfully request that Examiner telephone the applicants' attorney so that those issues can be resolved as quickly as possible.

Respectfully,
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